

## CLAIMS

What is claimed is:

1     1.     A method for managing a communications session with a device, the method  
2           comprising the computer-implemented steps of:  
3           establishing, with the device, a communications session that supports a first quality of  
4           service level;  
5           receiving a request for a service associated with the device;  
6           determining, based upon the request for the service and policy criteria, a second  
7           quality of service level to be supported by the communications session for the  
8           device; and  
9           modifying the communications session by causing a layer-2 change in a  
10           communications link used for the communications session, so that the  
11           communications session for the device supports the second quality of service  
12           level.

1     2.     The method as recited in Claim 1, wherein:  
2           the request for the service is received from a layer-2 gateway; and  
3           causing a layer-2 change in a communications link used for the communications  
4           session, so that the communications session for the device supports the second  
5           quality of service level includes signaling the layer-2 gateway to change the  
6           communications session with the device to support the second quality of  
7           service level.

1     3.     The method as recited in Claim 1, wherein causing a layer-2 change in a  
2           communications link used for the communications session, so that the

3           communications session for the device supports the second quality of service level,  
4           includes causing the modification of session context data at a layer-2 gateway.

1    4.    The method as recited in Claim 1, wherein causing a layer-2 change in a  
2           communications link used for the communications session, so that the  
3           communications session for the device supports the second quality of service level,  
4           includes generating and sending to a layer-2 gateway an AAA Change of  
5           Authorization (CoA) Request command that specifies a quality of service profile for  
6           the second quality of service level.

1    5.    The method as recited in Claim 1, wherein the first and second quality of service  
2           levels each specifies an amount of bandwidth to be allocated to the device.

1    6.    The method as recited in Claim 1, wherein the device is a wireless device.

1    7.    The method as recited in Claim 1, further comprising the computer-implemented  
2           steps of:  
3           receiving, from a first application server, first quality of service data that specifies the  
4                       second quality of service level;  
5           receiving, from a second application server, second quality of service data that  
6                       specifies a third quality of service level; and  
7           modifying, based upon the first quality of service data and the second quality of  
8                       service data, the communications session by causing a layer-2 change in a  
9                       communications link used for the communications session, so that the  
10           communications session for the device supports a quality of service level  
11           other than the first quality of service level.

1 8. An apparatus for managing a communications session with a device, the apparatus  
2 being configured to:  
3 establish, with the device, a communications session that supports a first quality of  
4 service level;  
5 receive a request for a service associated with the device;  
6 determine, based upon the request for the service and policy criteria, a second quality  
7 of service level to be supported by the communications session for the device;  
8 and  
9 modify the communications session by causing a layer-2 change in a communications  
10 link used for the communications session, so that the communications session  
11 for the device supports the second quality of service level.

1 9. The apparatus as recited in Claim 8, wherein:  
2 the request for the service is received from a layer-2 gateway; and  
3 the apparatus is further configured to cause a layer-2 change in a communications  
4 link used for the communications session, so that the communications session  
5 for the device supports the second quality of service level by signaling the  
6 layer-2 gateway to change the communications session with the device to  
7 support the second quality of service level.

1 10. The apparatus as recited in Claim 8, wherein the apparatus is further configured to  
2 cause the modification of session context data at a layer-2 gateway.

1 11. The apparatus as recited in Claim 8, wherein the apparatus is further configured to  
2 generate and send to a layer-2 gateway a AAA Change of Authorization (CoA)

3 Request command that specifies a quality of service profile for the second quality of  
4 service level.

1 12. The apparatus as recited in Claim 8, wherein the first and second quality of service  
2 levels each specifies an amount of bandwidth to be allocated to the device.

1 13. The apparatus as recited in Claim 8, wherein the device is a wireless device.

1 14. The apparatus as recited in Claim 8, wherein the apparatus is further configured to:  
2 receive, from a first application server, first quality of service data that specifies the  
3 second quality of service level;  
4 receive, from a second application server, second quality of service data that specifies  
5 a third quality of service level; and  
6 modify, based upon the first quality of service data and the second quality of service  
7 data, the communications session by causing a layer-2 change in a  
8 communications link used for the communications session, so that the  
9 communications session for the device supports a quality of service level  
10 other than the first quality of service level.

1 15. An apparatus for managing a communications session with a device, the apparatus  
2 comprising:  
3 means for establishing, with the device, a communications session that supports a first  
4 quality of service level;  
5 means for receiving a request for a service associated with the device;  
6 means for determining, based upon the request for the service and policy criteria, a  
7 second quality of service level to be supported by the communications session  
8 for the device; and

9 means for modifying the communications session by causing a layer-2 change in a  
10 communications link used for the communications session, so that the  
11 communications session for the device supports the second quality of service  
12 level.

1 16. The apparatus as recited in Claim 15, wherein:  
2 the request for the service is received from a layer-2 gateway; and  
3 the apparatus further comprises means for causing a layer-2 change in a  
4 communications link used for the communications session, so that the  
5 communications session for the device supports the second quality of service  
6 level includes signaling the layer-2 gateway to change the communications  
7 session with the device to support the second quality of service level.

1 17. The apparatus as recited in Claim 15, wherein the apparatus further comprises means  
2 for causing the modification of session context data at a layer-2 gateway.

1 18. The apparatus as recited in Claim 15, wherein the apparatus further comprises means  
2 for generating and sending to a layer-2 gateway a Change of Filters (CoA) Request  
3 command that specifies a quality of service profile for the second quality of service  
4 level.

1 19. The apparatus as recited in Claim 18, wherein the apparatus further comprises means  
2 for specifying the quality of service profile for the second quality of service level  
3 using a vendor-specific attribute containing the the 3<sup>rd</sup> Generation Partnership Project  
4 3GPP-Negotiated-QoS attribute.

- 1 20. The apparatus as recited in Claim 15, wherein the first and second quality of service  
2 levels each specifies an amount of bandwidth to be allocated to the device.
- 1 21. The apparatus as recited in Claim 15, wherein the device is a wireless device.
- 1 22. The apparatus as recited in Claim 15, further comprising means for:  
2 receiving, from a first application server, first quality of service data that specifies the  
3 second quality of service level;  
4 receiving, from a second application server, second quality of service data that  
5 specifies a third quality of service level; and  
6 modifying, based upon the first quality of service data and the second quality of  
7 service data, the communications session by causing a layer-2 change in a  
8 communications link used for the communications session, so that the  
9 communications session for the device supports a quality of service level  
10 other than the first quality of service level.